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U. S. Department of Agriculture
Issued April 1933

United States Department of Agriculture

BUREAU OF AGRICULTURAL ECONOMICS

SERVICE AND REGULATORY ANNOUNCEMENTS NO. 142

UNITED STATES STANDARDS FOR GRADES OF CANNED SNAP (OR STRINGLESS) BEANS

(Approved February 23, 1933)

DEPARTMENT OF AGRICULTURE,
Washington, D.C.

By virtue of the authority vested in the Secretary of Agriculture by the provision in the act of Congress entitled "An act making appropriations for the Department of Agriculture for the fiscal year ending June 30, 1933, and for other purposes" (Public, No. 269, 72d Cong.), approved July 7, 1932, authorizing an inspection service for farm products, I, Arthur M. Hyde, Secretary of Agriculture, do prescribe and promulgate the following standards for grades of canned snap (or stringless) beans, to be in force and effect on and after February 23, 1933, and as long as Congress shall provide the necessary authority therefor, unless amended or superseded by standards hereafter prescribed and promulgated under such authority. These standards shall supersede all standards for canned snap (or stringless) beans previously promulgated.

In testimony whereof I have hereunto set my hand and caused the official seal of the Department of Agriculture to be affixed in the city of Washington this 23d day of February 1933.



Arthur M. Hyde

Secretary of Agriculture.

DEFINITION

Canned snap beans are the vegetables prepared from fresh, immature pods of any of the varieties of the common garden bean, with ends of pods snipped, washed, with or without precooking (blanching), with the addition of potable water, with or without salt, packed in hermetically sealed containers, and sterilized by heat.

GRADES OF CANNED SNAP BEANS

U.S. Grade A (fancy) canned snap beans are tender pods of beans of similar varietal characteristics which are substantially whole; are uniform in color; and, unless declared to be ungraded for size, conform to the size claimed for the beans. They are surrounded by practically clear liquor; are practically free from discoloration, tough inedible strings, stems, and other defects; possess the flavor of young, tender, immature beans; and score not less than 90 points when scored according to the scoring system outlined herein.

U.S. Grade B (extra standard) canned snap beans are reasonably tender pods of beans of similar varietal characteristics which are substantially whole; are practically uniform in color; and, unless declared to be ungraded for size, conform to the size claimed for the beans. They are surrounded by reasonably clear liquor; are reasonably free from discoloration, tough inedible strings, stems, and other defects; possess a desirable fresh, young bean flavor; and score not less than

75 points and need not score more than 89 points, when scored according to the scoring system outlined herein.

U.S. Grade C (standard) canned snap beans are pods of beans of similar varietal characteristics which are substantially whole, and have reached such a state of maturity that the seeds are well developed, but not hard; are fairly uniform in color; and, unless declared to be ungraded for size, are fairly uniform in size. They are surrounded by liquor which may be somewhat cloudy; are fairly free from discoloration, tough inedible strings, stems, and other defects; possess a good flavor; and score not less than 60 points, and need not score more than 74 points, when scored according to the scoring system outlined herein.

Off-Grade (substandard) canned snap beans are canned beans which score less than 60 points when scored according to the scoring system outlined herein, or, when any one of the grading factors, with the exception of **UNIFORMITY OF SIZE**, falls in the subdivision D; or, canned snap beans that fall below any standard promulgated under the food and drugs act of June 30, 1906, as amended.

STYLES OF SNAP BEANS

"Cut" snap beans are portions of whole beans cut into lengths varying from 1 to 2½ inches, usually 1 to 1½ inches. The description of grades outlined herein will suffice for "cut" snap beans, the term "substantially whole" meaning, when applied to "cut" beans, that the portions of the pod are intact—not split, shattered, or broken.

"Asparagus style" snap beans are canned beans, the pods of which approximate in length, and are packed parallel to, the longest dimension of the closed container.

PREREQUISITES TO GRADING

CONDITION OF CONTAINER

Containers shall be sound and clean. If the containers are metal, they shall be free from rust and serious dents, and the ends shall be flat or concave.

CONDITION OF PACKAGE AND LABEL

If cased, the canned snap beans shall be packed in clean, neat, unbroken packages. If labeled, the labels on the container and package shall be clean and shall be neatly and securely affixed, and shall comply in all respects with the requirements of the Federal Food and Drugs Act.

FILL OF CONTAINER

Cans of snap beans will be considered as of standard fill if the head space, measured from the top of the product to the underside of the lid, does not exceed 10 percent of the total inside height of the container; and if the packing medium is not in excess of the quantity necessary for proper processing without impairment of quality.

A certificate of grade covering canned snap beans that do not meet the above requirements shall bear the legend,

"Below U.S. Standard"

"Slack Fill"

A certificate of grade covering canned snap beans that do not meet the above requirement in that the packing medium is excessive, whether or not the head space is excessive, shall bear at least the 2-line legend,

"Below U.S. Standard—Slack Fill"

"Contains Excess Added Liquid"

DRAINED NET WEIGHTS

Properly filled cans of snap beans should yield at least the drained weights indicated in the table below. When packed "asparagus style," the minimum drained weight of no. 2 cans shall not be less than 14½ ounces. A can of a size not mentioned shall yield a drained net weight that bears the same relation to the drained weight indicated for the can nearest in size as that existing between the capacities of the cans in question. Drained net weights of no. 2½ size cans

and smaller are determined by emptying the contents on a circular sieve, 8 inches in diameter containing 8 meshes to the inch, and permitting to drain for two minutes. Larger size cans are drained over a similar sieve 12 inches in diameter.

The maximum head space allowable in the sizes commonly used in packing snap beans is shown in the accompanying table:

Can size	Can dimensions (in inches)		Maximum capacity in water at 68° F. (in ounces)	Maximum head space allowable (measured from top of double seam in sixteenths of an inch)	Drained net weight (in ounces)	
	Diameter	Height			Whole	Cut
No. 1 (picnic).....	2½ ¹⁶	4	10.94	8.8	6½	6¾
No. 1 tall.....	3½ ¹⁶	4½ ¹⁶	16.70	9.9	9¾	9¾
No. 300.....	3	4¾ ¹⁶	15.22	9.5	8½	8¾
No. 303.....	3 ¾ ¹⁶	4¾ ¹⁶	16.88	9.4	9½	9¾
No. 2.....	3¾ ¹⁶	4¾ ¹⁶	20.55	9.7	11½	12
No. 10.....	6¾ ¹⁶	7	109.43	13.6	61	65

ARTIFICIALLY COLORED SNAP BEANS

Certificates of grade covering canned snap beans that are artificially colored shall bear the following statement in addition to the statement of grade:

“Below U.S. Standard—Low Quality but not Illegal

Because Artificially Colored”

ASCERTAINING THE GRADES

The grades of canned snap beans may be ascertained by considering the following factors: Clearness of liquor, uniformity of color, uniformity of size, absence of defects, maturity, and flavor. The relative importance of each element has been expressed numerically on a scale of 100. The maximum number of credits that may be given for each factor is:

	Points
I. Clearness of liquor.....	10
II. Uniformity of color.....	10
III. Uniformity of size.....	10
IV. Absence of defects.....	15
V. Maturity.....	35
VI. Flavor.....	20
Total.....	100

Note.—When grading snap beans declared to be ungraded for size, the factor of “uniformity of size” shall be disregarded. The other five factors shall be scored, the total of which shall be multiplied by 100 and divided by 90 for the final score, dropping any fractions.

ASCERTAINING THE RATING OF EACH FACTOR

The essential variations within each factor are so described that the value may be ascertained for each factor and expressed numerically. The numerical ranges within each factor are inclusive. For instance, the range 12 to 14 means 12, 13, and 14.

I. Clearness of Liquor.

- (A) To receive a rating within the highest group, 9 to 10 points, for this factor, the liquor surrounding the beans must be practically clear—that is, presenting not more than slight cloudiness.
- (B) If the liquor possesses but a small quantity of visible sediment, a credit of 7 to 8 points may be allowed.

- (C) If the liquor is somewhat roily, with an accumulation of sediment readily noticeable, or is slightly off color, a credit of 5 to 6 points may be allowed.
- (D) If the liquor is badly clouded, possessing a considerable quantity of sediment, or is badly off color, a credit of 0 to 4 points may be allowed.

II. Uniformity of Color.

- (A) If the color of the pods is uniform and is typical of the variety, and bright, a credit of 9 to 10 points may be allowed.
- (B) If the pods are somewhat deficient in color, a credit of 7 to 8 points may be allowed.
- (C) If the pods are fairly uniform in color but are dull, or if the color is variable, a credit of 5 to 6 points may be allowed.
- (D) If the color of the pods is poor, being dull or off color, a credit of 0 to 4 points may be allowed.

III. Uniformity of Size.—Canned snap beans of the so-called round varieties, if graded for size, shall meet the following size requirements:

- No. 0 size snap beans are snap beans that are $\frac{12}{64}$ of an inch, or smaller, in diameter.¹
- No. 1 size snap beans are snap beans that range from $\frac{12}{64}$ to $\frac{14\frac{1}{2}}{64}$ of an inch in diameter.
- No. 2 size snap beans are snap beans that range from approximately $\frac{14\frac{1}{2}}{64}$ to $\frac{18\frac{1}{2}}{64}$ of an inch in diameter.
- No. 3 size snap beans are snap beans that range from approximately $\frac{18\frac{1}{2}}{64}$ to $\frac{21}{64}$ of an inch in diameter.
- No. 4 size snap beans are snap beans that range from approximately $\frac{21}{64}$ to $\frac{24}{64}$ of an inch in diameter.
- No. 5 size snap beans are snap beans that range from approximately $\frac{24}{64}$ to $\frac{27}{64}$ of an inch in diameter.
- No. 6 size snap beans are snap beans that are over $\frac{27}{64}$ of an inch in diameter.
- (A) If the pods are practically uniform in size and symmetry—that is, in the two smaller dimensions—a credit of 9 to 10 points may be allowed.
- (B) If the pods vary slightly in size and symmetry, containing not more than 5 percent by count of so-called flat ² beans, a credit of 7 to 8 points may be allowed.
- (C) If the pods are noticeably lacking in uniformity of size and symmetry, containing not more than 10 percent by count of so-called flat beans, a credit of 5 to 6 points may be allowed.
- (D) If the pods are markedly lacking in size and symmetry, a credit of 0 to 4 points may be allowed.

IV. Absence of Defects.—The factor of absence of defects has reference to the degree of freedom from such defects as split pods, tough inedible strings, pods with unsnipped ends, blemishes, poorly and irregularly cut pods, stems, and loose ends.

- (A) If beans are practically free from the defects mentioned, a credit of 14 to 15 points may be allowed.
- (B) If beans are reasonably free from such defects, a credit of 12 to 13 points may be allowed.
- (C) If the defects are prominent, a credit of 10 to 11 points may be allowed.
- (D) If the defects are decidedly prominent, a credit of 0 to 9 points may be allowed.

¹ Diameter is determined by measuring the pods at their minimum dimension—that is, transverse to the axis.

² Flat beans refer to beans, the width of which is approximately one and one-fourth times the diameter—that is, the smallest dimension.

V. Maturity.—The factor of maturity refers to the stage of development of the seed pod and the seed. Consideration is also given to the texture and tenderness of the seed pod and seed.

- (A) To receive a rating within the highest group, 31 to 35 points, for this factor, the beans must be very tender. The seed must be very small and in the early stage of development.
- (B) If the beans are tender but slightly more mature than those in group (A), with seed small but somewhat more developed than in group (A), a credit of 27 to 30 points may be allowed.
- (C) If the beans are tender but offer some resistance to pressure between the fingers, the seed being developed to the extent that they are somewhat prominent but not hard, the pod not having passed the stage of succulence, a credit of 23 to 26 points may be allowed. Beans that fall in this classification shall not be graded above U.S. Grade C, or standard, regardless of the total score for the product.
- (D) If the beans are well developed and prominent, the seed being quite firm and the pod fibrous, a credit of 0 to 22 points may be allowed.

VI. Flavor.—The quality of flavor of canned snap beans shall be classified from the standpoint of palatability.

- (A) If the beans possess the typical flavor of very young, tender beans, a credit of 18 to 20 points may be allowed.
- (B) If the flavor is somewhat lacking in the highly desirable characteristics, a credit of 15 to 17 points may be allowed.
- (C) If the beans possess a fair bean flavor, a credit of 12 to 14 points may be allowed. Beans that fall in this classification shall not be graded above U.S. Grade C, or standard, regardless of the total score for the product.
- (D) If the flavor indicates that the beans have reached a mature stage, the flavor being more or less disagreeable, strong, or aged, a credit of 0 to 11 points may be allowed.

